



COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF ENERGY & ENVIRONMENTAL AFFAIRS
DEPARTMENT OF ENVIRONMENTAL PROTECTION
WESTERN REGIONAL OFFICE

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JUL 03 2008

Town of Amherst
Department of Public Works
586 South Pleasant Street
Amherst, MA 01002
Attention: Guilford Mooring, Supt.

Re: Amherst-DSWM-Landfill
Amherst Landfill - New
Belchertown Road (Rt. 9)
CSA Review - **Permit Approval**
BWPSW12
Transmittal #W036787
08-008-002

Dear Mr. Mooring:

The Massachusetts Department of Environmental Protection (MassDEP) has completed review of the Comprehensive Site Assessment (CSA) report and permit application for the Amherst Sanitary Landfill (the "New Landfill") located off the north side of Belchertown Road in Amherst. The CSA was submitted on behalf of the Town of Amherst (the Town) by its consultant, Camp Dresser & McKee, Inc. (CDM), of Wethersfield CT.

The "New Landfill", hereinafter referred to in this document as "the landfill") consists of three lined cells, occupying approximately 26 acres of a 56-acre, site assigned property owned by the Town, off the north side of Belchertown Road (Route 9). Phase I of the landfill (the southernmost cell) was built in 1982 and capped in 1988, Phase II (the northernmost cell) was built in 1986 and capped in 1993, and Phase III (the central cell) was built in 1991, and was closed and capped in 2003. An active landfill gas (LFG) collection system collects LFG from Phase III and a portion of Phase II and destroys the collected LFG in an enclosed, LFG flare at the site, which has been in operation since November, 2003.

Summary of Comprehensive Site Assessment

Environmental assessment and monitoring activities at the landfill



have to date consisted of the following:

- A total of fifteen groundwater monitoring wells have been installed to monitor groundwater quality around the landfill, including three upgradient wells, one crossgradient well, and eleven downgradient wells. The wells range in depth from 17 to 69 feet.
- The groundwater monitoring wells at the site were sampled and analyzed for the parameters outlined at 310 CMR 19.132(h) (1-3), including dissolved RCRA 8 metals, and volatile organic compounds (VOCs) by EPA Method 8260;
- Five private wells on Harkness Road and one private well on Old Belchertown Road have been sampled since 1994 for a limited indicator parameter list;
- Surface water and sediment samples were collected from seven surface water locations around the landfill (Harkness Brook northwest of the landfill, the pond northeast of the landfill, the small stream east/southeast of the landfill, and the kettle pond just south of Rt.9) and were analyzed for the parameters outlined at 310 CMR 19.132(h) (1-3), including total RCRA 8 metals, VOCs by EPA Method 8260, polychlorinated biphenyls (PCBs) and Pesticides, and total petroleum hydrocarbons (TPH);
- A composite leachate sample from the landfill's leachate collection system has been sampled and analyzed semi-annually since 1990 for the parameters outlined at 310 CMR 19.132(h) (1-3); and
- A total of nine landfill gas (LFG) monitoring wells have been installed along the perimeter of the landfill, and LFG monitoring has been performed for %Lower Explosive level (%LEL), %carbon dioxide, %oxygen, and hydrogen sulfide..

The results of environmental monitoring to date indicate the following:

- Groundwater flow beneath the site is from the northeast to the southwest;
- All groundwater monitoring wells were non-detectable (ND) for all VOCs;
- Groundwater quality appears to have been slightly impacted by operation of the landfill, with indicator parameters, including specific conductance and manganese, elevated at some of the downgradient monitoring wells (i.e. MW-2, MW-7B, MW-8, and MW-10) versus the upgradient monitoring wells MW-4, MW-5 & MW-6. The impacts appear to have been from surface runoff from the landfill onto the surrounding areas during landfill operation. There have been no exceedances of the MassDEP's GW-1 groundwater standards, which are equivalent to MassDEP's Primary Drinking Water Standards and Guidelines (maximum contaminant levels, or MCLs) at any of the monitoring wells;
- Private well samples have showed some exceedances of the Secondary MCLs (SMCLs) for iron and manganese, which appear to

be natural background conditions and appear to generally be consistent with analytical results since such sampling began in 1994. The SMCLs are aesthetically based, and are not health based standards;

- All surface water samples were ND for all VOCs. Total metals analyses of the surface water samples were ND for all metals except iron and barium (which are naturally occurring in surface waters), and were below all applicable USEPA Water Quality Criteria, except for SW-4 (the ponded surface water at the southeast corner of the landfill property), which slightly exceeded the WQC criteria for iron (1,070 micrograms/liter, or ug/l, vs. the WQC of 1,000 ug/l. It should be noted that the WQC levels apply to dissolved metals, not totals;
- All sediment samples were ND for all VOCs, and all metals levels in sediments were below all of the applicable MassDEP Threshold Effects Concentrations (TECs) guidelines for sediment; and
- LFG monitoring that was performed did not show evidence of LFG migration from the landfill, with 0% Lower Explosive Limit (%LEL) and ND levels of hydrogen sulfide in all LFG monitoring wells and the transfer station building and rolloff pit.

CDM performed a qualitative risk assessment for both public health and ecological receptors. CDM concluded that "The results of this CSA indicate that the risk to human health, safety and the environment from the Belchertown Road landfill is negligible".

MASSDEP DETERMINATIONS

Personnel of the MassDEP have reviewed the CSA report for the landfill in accordance with MGL c. 111 s. 150A, MGL c. 30A, 310 CMR 19.000, the MassDEP's publication Landfill Technical Guidance Manual (the LAC), revised in May, 1997, and the MassDEP's publication Standard References for Monitoring Wells (WSC-310-91). The MassDEP has determined that the CSA report is acceptable in accordance with MGL c. 111, s. 150A and MGL c. 30A, subject to the conditions outlined below.

1. Groundwater monitoring wells MW-1, MW-2, MW-3, MW-4, MW-5, MW-6, MW-7A, MW-7B, MW-8, MW-9, MW-13S & MW-13D shall be sampled and analyzed annually for the parameters outlined at 310 CMR 19.132(h) (1-3), including dissolved RCRA 8 metals, and VOCs by EPA Method 8260.
2. The groundwater monitoring wells shall be sampled in accordance with the procedures outlined in the MassDEP's publication Standard References for Monitoring Wells (WSC-310-91). Sampling can alternatively be performed in accordance with the USEPA publication Low Stress (low flow) Purging and Sampling Procedure for the Collection of Groundwater Samples from Monitoring Wells, dated July 30,

1996.

3. Groundwater elevations shall be measured at all site monitoring wells during each monitoring round, and a groundwater contour map shall be prepared from this data for each round.
4. Surface water samples shall be obtained annually from each of the following surface water sampling locations and shall be analyzed for the parameters outlined in 310 CMR 19.132(h) (1-3), including VOCs by EPA Method 8260, and dissolved RCRA 8 metals:
 - SW-3: The ponded stream east of Phase I, approximately 100 feet upstream (north) of the culvert through the access road;
 - SW-4: The ponded stream off the southeast corner of Phase I, near the outlet pipe;
 - SW-5: The kettle pond south of Rt.9;
 - SW-6: The stream off the northwest corner of Phase II, approximately 200 feet upstream of the footbridge there; and
 - SW-7: The same stream, approximately 200 feet downstream of the footbridge.
5. All VOC analyses shall be performed as outlined in 310 CMR 19.132(h) (1-3), specifically methyl ethyl ketone, methyl isobutyl ketone, 1,4-dioxane and acetone shall be included, and unknown peaks having intensities greater than 5 times the background intensity (Tentatively Identified Compounds, or TICs) shall be identified. The analysis for 1,4-dioxane shall be performed by methods to achieve a minimum detection limit of 3 micrograms/liter (ug/l) for 1,4-dioxane.
6. The existing private well sampling program shall be continued, with sampling of these private wells to be performed on a minimum of an annual basis.
7. Quality Assurance/Quality Control Plan (QA/QC) protocols for all environmental monitoring should generally follow those outlined in the MassDEP's LAC and Standard References manuals.
8. All annual groundwater and surface water sampling shall be performed by November 1 of each calendar year.
9. All on-site LFG wells and all of the buildings at the transfer station area shall be monitored semi-annually (Summer and Winter) for LFG. The Winter LFG monitoring shall be performed by no later than March 1 of each calendar year, and the Summer LFG monitoring shall be performed by no later than October 1 of each calendar year. LFG monitoring

shall be performed as outlined on p. 4-16 and 4-17 of the LAC manual for % Lower Explosive Limit (% LEL), % oxygen, and hydrogen sulfide. If LFG levels exceed 25% LEL at the property line, the MassDEP shall be notified within 24 hours, as outlined in 310 CMR 19.132(4)(h), and the Town shall monitor the residence(s) near the exceedance for the same parameters. If LFG levels exceed 10% LEL within any building, the MassDEP shall be notified within two hours, as outlined in 310 CMR 19.132(4)(g), and the Town shall take immediate action to protect public health and safety.

10. The Town shall submit to the MassDEP a report containing the results of groundwater, surface water and LFG monitoring for the landfill within 60 days of the date of such monitoring, which shall include the following:
 - (A) Tabular summaries of all analytical and monitoring data performed during the monitoring period, including LFG monitoring;
 - (B) Laboratory data sheets for samples analyzed; and
 - (C) A groundwater contour map on an annual basis.
11. The Town shall operate and maintain the LFG flare for the landfill. The Town shall inform MassDEP immediately (within 2 hours) of any flare malfunctions, including planned or unplanned shutdowns. The Town shall immediately correct any flare malfunctions, including planned or unplanned shutdowns. The Town shall submit monthly operating reports to MassDEP's Solid Waste section concerning operation of the flare, which shall contain the following information:
 - (A) Vacuum and flow readings at the flare, on at least a monthly basis;
 - (B) A description of any periods of downtime, including dates and times, when the flare is not operational during the month; and
 - (C) A description of any problems, repairs or maintenance for the flare during the month.
12. A sufficient number of trained staff shall be available to operate, maintain and monitor the LFG flare to ensure that a trained operator is always available to respond to any flare malfunctions.

Pursuant to 310 CMR 19.037(5), any person aggrieved by the issuance of this approval, except as provided for under 310 CMR 19.037(4)(b), may file an appeal for judicial review of said decision in accordance with the provisions of M.G.L. c. 111, s. 150A and C. 30A not later than thirty [30] days following notice of this decision. The standing of a person to file an appeal and the procedures for filing such appeal shall be governed by the provisions of M.G.L. c. 30 A. Unless the person requesting an appeal requests and is granted a stay of the terms and conditions of the permit by a court of competent jurisdiction, the permit

decision shall remain effective or become effective at the conclusion of the 30 day period.

Any aggrieved person intending to appeal the decision to the superior court shall provide notice to the MassDEP of said intention to commence such action. Said Notice of Intention shall include the MassDEP File Number (03-008-008) and shall identify with particularity the issues and reason(s) why it is believed the approval decision was not proper. Such notice shall be provided to the Office of General Counsel of the MassDEP and the Regional Director for the regional office which made the decision.

The appropriate addresses to which to send such notices are:

General Counsel
MassDEP of Environmental Protection
One Winter Street-Third floor
Boston, MA 02108

&

Regional Director
MassDEP of Environmental Protection
436 Dwight Street - 5th Floor
Springfield, MA 01103

No allegation shall be made in any judicial appeal of this decision unless the matter complained of was raised at the appropriate point in the administrative review procedures established in those regulations, provided that matter may be raised upon a showing that it is material and that it was not reasonably possible with due diligence to have been raised during such procedures or that matter sought to be raised is of critical importance to the public health or environmental impact of the permitted activity.

The MassDEP reserves the right to require additional investigatory or remedial work, including alternative remedial measures, if continued monitoring results indicate such a need.

If you should have any questions or comments regarding this correspondence please contact Larry Hanson of this office, at #413-755-2287.

Sincerely,



Daniel Hall
Section Chief
Solid Waste Management

cc: Amherst Town Manager - Lawrence Shaeffer
Amherst Health Dept. - Epi Bodhi, Director